NEW ENGLAND FARMER,

AND HORTICULTURAL REGISTER.

PUBLISHED BY JOSEPH BRECK & CO., NO. 52 NORTH MARKET STREET, (AGRICULTURAL WAREHOUSE.)

VOL. XVIII.] BOSTON, WEDNESDAY EVENING, FEBRUARY 12, 1840. [NO. 32.

N. E. FARMER.

We give below a sketch of the remarks of Dr C. T. Jackson, at the Second and Third Agricultural meetings, on *Soils and Manures.* Our notes, as we have before said, in such cases are very imperfect, and our aim is simply to give the ideas and statements of the gentlemen whom we report, not attempting to retain their language. Under such circumstances, it is a matter of no small labor and difficulty to write them out in full; and we must claim the indulgence of our readers for the dress in which these remarks appear, and for which their authors are not responsible. We have deemed them too valuable and interesting to be lost.

It must not be forgotten, however, at the same time that, if we have not misrepresented them, (as we trust we have not,) *they*, and not *we*, are responsible for the statements made and the opinions given. Because we give these opinions it is not therefore to be inferred that we *adopt* them; but we do not deem it courteous to interrupt the discourse by any interpolation of our queries distrusts, or contradictions. From some of the notions of our friend Dr Jackson, we dissent—but *that* by no means proves that he is in error: and we give them for the present to our readers with all the claims to respect and confidence, to which his intelligence, his distinguished learning, his indomitable spirit of inquiry, and his persevering industry entitle them. Truth and evidence are the great objects of all sound philosophy; and all that we want for these are fair play and an open field. H. C.

—

SPEECH OF DR. C. T. JACKSON,

Geological Surveyor of Maine, New Hampshire and Rhode Island, at the Second and Third Agricultural Meetings.

Dr Jackson began by expressing the pleasure he had in these meetings for mutual information and improvement; and he augured the most beneficial results from the active spirit of inquiry which was now so generally awakened.

Agriculture is yet to derive immense advantages from scientific cultivation. The first element in agriculture is the soils, which constitute the seat of its operations. The soils which the earth presents, and which in different localities are found very differently constituted, although the same simple elements enter, to a certain extent, into the combination of all of them, are among the most important objects of inquiry and examination to the intelligent farmer.

Soils are, properly speaking, only the *detritus* or broken substance of decomposed rocks, intermixed in various degrees with organic matter in a state of dissolution and diffusion. The breaking down and the comminution of the rocks, so as to form the fine particles of the earth, have been the progressive results of the influence of air, moisture and frost, exerted through many ages which have passed, and still in constant and active operation. That the earths were derived from the disintegration of rocks, he deemed conclusively established by the fact, that by the chemical and indeed microscopic examination of soils, they are found to consist of the same elements which enter into the formation of the rocks. In soils derived from granite were found quartz, feldspar, and mica; and the decomposition of slate rocks produces clay. The presence of limestones and porphyry serves in each case to produce a peculiar soil.

All the various mineral bases have an influence upon the character of a soil. Some of these minerals undergo a decomposition and enter directly into plants: silex, alumine, magnesia, all enter into plants; and silex, as is well known, forms the coat or skeleton of all graminaceous plants, or otherwise of plants belonging to the family of the grasses. These elements have much to do with the fertility of a soil.

The enriching mineral substance found in New Jersey, alluded to in a former discussion, is what is called a green sand, composed of silex, potash, and iron. It yields potash, and thus neutralizes any acid substances which may exist in the soils, to which it is applied.

Every observing traveller in passing through different countries, perceives that the soils of different countries possess properties peculiar to themselves. Thus limestone soils seem most congenial to the production of wheat; and granitic soils to that of grass. Each rock may be traced by its peculiar vegetation. The soils on the trap-rock formation in this State, are distinctly marked.

A great part of the State is of what is called the diluvial formation. In this case there is an evident removal of the earth's surface or soils by some violent convulsion in a sort of wave, from the north to the south. The proofs of this deluge in its advances south may be distinctly traced. Thus in a diluvial formation the soils will be found to be composed of the same elements as the rocks some miles distant to the northward of that place; and may be very different from the soil, which might be said to belong to the place, where they are found. As evidence of this movement south, the rocks in the vicinity of Providence are evidently formed from the disintegration of rocks of the greywacke formation some distance to the northward. The greywacke rocks are those composed of other rocks of various descriptions collected together in a miscellaneous combination, and cemented by a kind of argillaceous paste. In Maine there are abundant proofs that the whole soil of the country has, in many places, been removed southwardly. In Thomaston the soil is evidently of diluvial formation. Portland rests upon a formation of mica and talcose slate; but the soil is granitic and evidently transported from the vicinity of Brunswick.

The diluvial soils were transported by some extraordinary change in the earth's surface, produced, it may be, by a deluge or some similar catastrophe. Alluvial soils are formed from the washing of high places into those which are lower, by rains or freshets, and take place by a gradual deposit of earths or sands from water thus rendered turbid. The diluvial soils have a higher antiquity than the alluvial. The fertility of alluvial soils is owing, in a considerable measure to the fine comminution of the particles of which they are composed. This allows the roots of plants to spread themselves freely. There is much vegetable matter mixed up with them, though these soils are not remarkable for its abundance. Upon an examination of the alluvial soils of the Mississippi, the Ganges, and the Nile, they are found nearly to resemble each other, with the vegetable matter contained in them in a finely divided state.

The mixed elements of soils have a powerful action upon each other, and upon the plants which grow in them. Their earthy parts have an electromotive power, which operates not only by the roots but by the leaves. A fertile soil consists of elements in a positive and a negative electric state, fairly balancing each other. If the soil is acid, it is barren; if alkaline, barren. The acid is in a negative, the alkaline in a positive electric state. Vegetable manures become acid or negative; animal manures positive or alkaline: they must be combined in order to produce the best results. When peats alone are used for manuring soils, the results are not always favorable. Farmers pronounce it a cold substance. In its natural state it abounds in acid properties and produces sorrel. We may render this substance one of the most valuable of manures by suitably preparing it, according to the experience of many farmers. Peat should be combined with some alkaline or basic substance, which will neutralize the acid which prevails in it, and then it will supply an abundant nutriment to vegetables. Peat is composed of mosses which grow and then continually decay, giving place constantly to a succession of these sphagneous plants, intermixed with leaves and decayed trees. They abound on the sea-board. Swamp mud resembles peat in proportion to the decayed vegetable matter which it contains; and is adapted to supply the manure we want.

Peat being dug out, another growth of it comes forward, and after a while its place is supplied again. On Block Island, where it abounds, it is used altogether for fuel. In this place the peat contains 98 per cent. of vegetable matter. Our peats contain from 80 to 97 parts of vegetable matter. Swamp mud consists of vegetable matter and earth, making a good manure when its acid properties are neutralized. Several farmers in the neighborhood of Boston have experienced its value. Peat can be substituted by proper management for manure. A distinguished farmer says that farming cannot be carried on in his location without peat. Two farmers within his knowledge have mixed three parts of peat with one of stable dung. By mixing it with lime and animal manure, ammoniacal gas is produced, which dissolves the peat and converts it into a powerful manure.

Lime is highly useful in its application to soils. In bone manure it is found in combination with phosphoric acid. The crenic and apocrenic acids unite with it and form manures. All manures before they act, become converted into salts. Soils

are in an acid or neutral state. Large tracts of country, which are now barren, by proper applications might be rendered fertile. A farm within his knowledge, which was a blowing sand, a pine barren, and almost hopeless, on which ten bushels of corn to an acre could scarcely be grown, by the judicious application of ashes, has been made to produce forty to fifty bushels to the acre.

The Dr here illustrated his position by giving the chemical analysis of certain soils in Rhode Island, which it is understood will be presented to the public in his report in a detailed form. Methods should be taken to render the insoluble matter in soils soluble, that it may be taken up by the plants; and it is desirable that this process should proceed gradually. If acidities abound in the soil, correctives must be applied. It is easy to convert one quality of soil into another. The value of geological investigations is not properly estimated.—An analysis of soils is greatly wanted. The statistics of agriculture are greatly wanted. Farmers are not exact in their observation of their crops.—Many valuable agricultural districts are bottomed upon clay. This is desirable in order to preserve the manures which are applied to them. In soils where the manures applied pass through them by infiltration, much loss is sustained; and they are not favorable to agricultural products. This infiltration of manures is doubted by some, but the condition of our wells proves it. The water in a barn yard is never pure. As much as a teaspoonful of vegetable matter to a gallon is often obtained from waters which are considered pure. This may be seen by any one who will evaporate the Boston water to dryness. In the purest water obtained from lakes, 1 1-2 grain of vegetable matter to the gallon may be obtained. In the water of Boston, 38 grains are found to the gallon. Soils brought from 150 feet depth in this neighborhood, are found charged with vegetable matter.

Land with a foot of top soil on a gravelly substratum may be unproductive. This is the case with the soil on Seekonk plains, which has a foot of soil containing 11 per cent. of vegetable matter; but manures applied pass through it by filtration; and it suffers from drought.

All our waters come from the top soil. Clay is a retainer of water. Bog iron ore is found in soils and is prejudicial to vegetation. There is a ready way for a farmer to test his water. By the application of a solution of lunar caustic to a glass of water, if it contains vegetable matter, it will become red. Distilled water will not exhibit this appearance.

Saline matters abound in soils in the form of carbonates, sulphates and phosphates. Lime is an important amendment to the soil by causing it to furnish nutriment to the plants. It is a chemical reagent and decomposes manures and does not, as has been supposed, form insoluble matters. In the ashes of wheat, lime exists to the amount of 15 per cent. It is found in some proportion in all soils. The carbonate of lime is a valuable amendment to soils and especially to those which contain iron or copperas. Gypsum is a powerful stimulus to vegetation. Lime in the form of a carbonate is easily applied. The management of lime is too generally misunderstood. Fields perfectly barren have been rendered fertile by the use of it. There are few exceptions to this fact in Rhode Island. In some cases its application has been triumphantly successful, and in many cases of failure, the lime has been found to be highly magnesian. There are various matters connected with these subjects which will furnish excellent texts for discussion hereafter.—The action of manures is particularly important. Science here is of great importance. Certain acids in soils have been discovered by Berzelius. The crenic and apocrenic acids. These are found in the soils of both hemispheres; in the soils of the Mississippi and the Nile. These soils closely resemble each other. The soil of the Nile contains 2.8 per cent. of the carbonate and phosphate of lime. The soil of the Mississippi has less iron and more clay.

The introduction of science into agriculture has been of great benefit. How soils are to be rendered fertile or how corrected, have hitherto been matters of empiricism. We should desire to act understandingly, not ignorantly.

The changes which take place in the progress of the growth of plants, are remarkable. In the germination of the seed, carbonic acid is given out, and oxygen absorbed. After the leaves are formed, they absorb carbonic acid and give out oxygen. When the plant ripens, they give out carbonic acid and absorb oxygen. All manures act on the foliage. If plants are overstrained they fail to produce fruit. It is important to find the proper point or limit of manuring. A distinguished gardener engaged to produce a geranium leaf as large as a cabbage: it was effected, but the plant perished in the effort.

Bleaching powders or chloride of lime, are a powerful manure, and produce astonishing effects on vegetation. The ammoniacal gas or Sal Volatile, operates powerfully upon plants, and this matter is produced by the fermentation of barn manures.

In soils which are porous it is advisable to use manures in a long state. The manures which are obtainable are different in different places. Experiments have been made with bone manure, lime, and ashes, and, as reported, with different results. There are, undoubtedly, differences in soils, which affect their operation. These subjects deserve inquiry and observation. Agricultural observations should be made exact and certain. As the pursuit becomes intelligent it rises in dignity. Why should farmers be ignorant of their great art, when it is the aim and boast of every other profession and pursuit, to study their art thoroughly? Agriculture may be rendered scientific; and science well applied must conduce to render it more profitable.

Facts in these matters are of the highest importance. In Maine ashes were thrown away. The Long Island farmers are willing to send to Massachusetts to obtain them. The intrinsic value or efficiency of the material cannot be affected by the different estimation in which they are held. Peat we see in some places is highly esteemed as a manure. In many places it is utterly neglected; and this can arise only from ignorance of its value or of the proper mode of applying it.

Facts, he repeated, are of the highest importance. Peat in a crude state, is not suited for application to the land. It must be decomposed, and its acidities corrected. A farmer in Rhode Island has made much use of swamp mud compounded with fish, the Menhaden, which are taken in their bays in great abundance. To eight cart loads of swamp mud or peat, he applied one barrel of fish. This compost is denominated fish-pie. The rotting of the fish decomposed the peat and the peat absorbed the ammoniacal gases, which escaped from the decaying fish. The farmer deemed this mixture of equal value with the best of unmixed barn manure. On a level field, planted with corn at right angles, every row manured with this compost was distinctly observable and was eight times as large as that part dressed with hog manure. At the harvest the crop from the rows manured with this compost gave an increase over the other parts of the field of fifty per cent. Any decaying animal substance, on being mixed with it, will produce a decomposition of peat.

The physiology of vegetation is a subject deserving of much attention. The mode in which plants receive their nutriment from the soil is not, as has been supposed, by capillary attraction, but the vegetable food in a liquid form is forced into the minute vessels of the plants by an electric or voltaic agency. This is the discovery of a Frenchman by the name of Detrochet, and is called by him *endosmose*. [Dr Jackson here illustrated this matter by a small apparatus.] This operation is at once suspended by the presence of certain substances, such as sulphuretted hydrogen or one drop of fœcal matter in the vessel. Acids and alkalies in their combination, act as galvanic batteries and forward the process of vegetation.

The physiology of plants should be studied by the farmer. Innumerable, curious and wonderful operations are continually going on before him. No situation is more favorable than his to intellectual and moral improvement; and no employment more interesting than the contemplation of the phenomena of the natural world.

The green sand spoken of is as difficult of solution as the feldspar in granite. In Sweden the carbonate of potash is used to decompose the nitrate of lime, which is formed in their artificial nitre beds, which are similar to compost heaps.—Nitre is produced abundantly in our dung heaps. Many other salts are produced by chemical changes, which are continually going on in the earth and air. The putrefaction of animal and vegetable substances is productive of various changes, and of substances useful in vegetation. The crenic and apocrenic acids are always found in soils, and the degree of their presence when ascertained, will indicate the applications to be made to the land.

The skeletons of all plants and animals have lime for their bases. Silex gets into plants in a manner altogether mysterious. It is found in all plants with hollow stems, such as many of the grasses, in wheat and the cereal grains, in bamboo and flags. The crenic and apocrenic acids operate to dissolve silex. The absorption of plants is not wholly by their roots, but by their leaves, which are the lungs of plants and gather the carbonic acid gas from the air, and its carbon is converted into solid wood. Nature pursues her operations in one eternal round, and all things combine mutually to assist and modify each other. Plants are highly beneficial to life and health, in absorbing and decomposing the elements of the air, and returning that portion which is necessary to respiration and life.

Agriculture is yet to make great advances in this country. The value of peat lands is very imperfectly understood. A farmer in the vicinity of Boston, distinguished for his scientific and practical skill, has obtained one hundred bushels of corn to the acre upon redeemed peat meadows; and obtains from these lands an income of ten to twelve per cent. profit. Land might be cultivated with much more skill and to much higher profit in proportion to the skill applied. Liquid manures among

us are almost entirely wasted. Night soil is often thrown away, and yet it is one of the most efficient of manures. With all our advantages, we bring Indian corn from Africa, and the country of the Nile furnishes us with pease and beans.

The population of China is immense and supported wholly from the soil. The allowance for a China man is indeed small, as three dollars per year will serve to keep soul and body together; but even to earn this, every person does and must work. Among this people agriculture is carried to an extraordinary degree of perfection. With us too large a portion of our people are devoted to trade; and the pursuits of rural industry are deserted for the hazards of speculation and commercial life. As we cross our breeds of cattle that we may improve our stock, it would be fortunate if we could so cross our farmers and merchants that the habits of exactness in keeping accounts and the enterprise and spirit of progress which distinguish the mercantile classes, could be in some measure transferred or infused into our farmers.

—

On the second evening, as on account of the inclemency of the weather on the former evening, the attendance was comparatively thin, Dr Jackson recapitulated parts of his former remarks, and continued and enlarged upon the subject of soils and manures. We shall refer only to those remarks which were not given in the preceding sketch; or which seem necessary to illustrate what was said before.

Great advantages seem to result from the mere mechanical mixture of soils, as for example, of sand with clay or clay, with sand. This seems to affect their electro-motive power and induces absorption in the plant. Besides the combined acids which exist in soils, there is often much free acid, which requires to be taken up or neutralized. There is much siliceous matter in all soils. The oxides of different minerals abound in soils. These have different electric powers, which require to be understood and regarded. Many soils which have been thought to contain no vegetable matter, have been found upon examination to contain eightysix tons of vegetable matter to an acre. Fields of barren sand have been rendered productive by the application of alkaline substances. These soils have been ashed, and portions of vegetable matter have been removed by two successive crops. In some soils there is a large amount of vegetable matter in an insoluble state. In this case it must by some application be rendered soluble, and this can easily be done.

The geological formation of soils is of much importance. A soil with a loose substratum must lose much by infiltration.* The farmer will find great advantages from the chemical analysis of his soils. A gross analysis will not show the differences which exist. It must be conducted with a refinement of skill and care. The influence of half a bushel of gypsum spread upon an acre of land has been known to render it fertile. It seemed a mere drop in the bucket, yet it produced a surprising difference in the crop. Gypsum has not the same effect on all soils. If the soil abounds in the ingredients which are applied, they are thrown away. If a soil, for example, contains 1.5 per cent of phosphate of lime, it does not require the application of bone manure. So of lime where lime abounds.—The soil of the banks of the Nile, probably the most fertile in the world, contains only 2.8 per cent. of lime. The saline manures, such as carbonates, sulphates, phosphates, &c. are absorbed by the plants. They act as stimuli to vegetation; and change the soil so as to render it fertile. Saline manures do not act always in the same way. They act principally on the foliage. They excite action in the plant, and carbonic acid gas is absorbed. The decomposition of vegetable substances gives out carbonic acid gas, which is immediately seized upon by the plants. Large amounts of ammoniacal gas are obtained from the putrefaction of animal substances. This is a valuable manure. The carbonate of ammonia, to obtain it pure from the shops, would be too expensive for a manure. We must make it in our dung heaps.

The nature of manures is just beginning to be understood. The attention paid to it, when science was imperfect, led to few valuable results.—Two new acids were discovered by Berzelius in 1833—the crenic and apocrenic. They were discovered in the Porlar well in Sweden. They are found in all soils. They are among the constituents of peat. They are probably universal. These acids must be neutralized.

The opinions of farmers are often only blind prejudices, though there are bright and honorable exceptions to this remark. Facts which are universally admitted must have a foundation. These acids are found in humus or geine—are found also in our waters—in all soils—sometimes in union with bases—sometimes in a free state. In respect to these scientific investigations, we have as yet only skimmed the surface. More, however, has been effected within the last three years than ever before since the history of man.

Geological and agricultural surveys are creditable to the State. The facts which they collect and embody, may be rendered of the highest service.—A State geologist might be fully occupied in the analysis of soils. Agriculture, thus made the subject of scientific inquiry, would cease to be a drudgery and attain its proper rank among the first employments of man. Agricultural books are many of them full of absurdities, because the nature of the elements of which they treat is so little understood. Many have heard of the experiment of the man who shut up a hen and fed her exclusively upon wheat. It was a matter of insoluble mystery how, under such circumstances, she could obtain lime enough to form the shells of the eggs which she laid, which in truth contained a weight of lime greater than the weight of her body. It was not known that the wheat itself on which she was fed, furnished the lime which she required. Chemistry shows that lime enters into the composition of wheat.

Every farmer has not a taste for science; but some have, and this taste should be cultivated and encouraged. Subjects connected with agriculture are well adapted for country lyceums. Here facts would be obtained from practical and observing minds. The action of manures should particularly invite attention. Experiments in cultivation should be made on soils whose composition is known; and products should be exactly noted and compared with each other.

De Candolle, a distinguished Swiss philosopher, who has given particular attention to vegetable physiology, has treated of the action of poisons upon plants. There are substances which are poisonous to plants as there are those which are destructive of animal life. *Nux vomica* and some other substances poisonous to animals, are poisonous to plants. Substances which taken into the stomach of a man may be serviceable to health, if received into his lungs might be fatal. So substances which if applied to the roots of plants might prove destructive, if imbibed in a gaseous form by the leaves, may stimulate and advance their growth. In simple carbonic acid gas, plants would die; but received in quantities larger than exists in our atmosphere, it proves favorable to them. Carbonic acid gas, which in certain quantities is nutritious to plants, is destructive to animal life.

The quantity of vegetable matter in soils and other different substances, presents a curious inquiry. Silex is the same as rock crystal, obtained after solution. Alumine is the same as clay; but clay is not found pure, and usually contains more than fifty per cent. of silex. Oxides of iron, manganese and lime are found. Lime is usually found in the form of a carbonate. Peroxide of iron, iron rust, is found. Silex, alumine, lime and iron, combined in various proportions, constitute soils. Vegetable matter containing the crenic and apocrenic acid is found. Geine is not a simple proximate principle but contains these two acids. [The Dr illustrated this matter by an exhibition of the crenate and apocrenate of copper, obtained from geine.]

The analysis of a clay soil in this vicinity is as follows:

Water,	2.
Vegetable matter,	3.5
Silex and alumine,	74.
Carbonate of lime,	5.
Oxide of iron,	15.
Loss,	.5
	100.

Of another is as follows:

Dark clay,	
Water,	8.
Vegetable matter,	14.
Silex and alumine,	72.6
Carbonate of lime,	5.4
	100.

To give some idea of the quantity of vegetable matter contained in an acre of ground, we may make the following calculations:

Example of calculation of the weight of a soil and of its manure.

Let the specific gravity of a soil be 1.277—water being 1.: then one cubic foot of water weighing 1000 ounces, a cubic foot of the soil would weigh 1277 ounces or 79,187 lbs.

An acre of land contains 43,560 square feet area, and if we estimate the cubic foot of soil as weighing 79,186 lbs. or half a cubic foot at 39 1-2 lbs. nearly, supposing we wish to calculate the weight of an acre of the soil for the depth of six inches, (the usual depth of tillage,) we have the following sum: 43,560×39 1-2=1,719,620 lbs., or 859 tons nearly,

*The Dr here gave another pointed reference to the impure state of the well water of Boston, which was felt like an electric shock in the abdominal muscles of the representatives from the country; (the Boston gentlemen are too far gone in this matter to feel at all,) and made them think at once of resigning their seats or removing the seat of government. There are salts of lime enough in the water of Boston wells drank every year, to make ten statues as large as Lot's wife! and as to the other impurities which exist in it, according to the Dr.'s account, they are not to be named. No apothecary's mixture surpasses it; and we know of nothing for which it is suited but for whiskey or brandy punch!

as the weight of an acre of this soil to the depth of half a foot.

If then the soil contain 9 1-2 per cent. of vegetable matter, 3.2 per cent. being soluble and 6.3 insoluble—859×9 1-2÷100=81 1-2 tons of vegetable matter to one acre within 6 inches depth. Of this 27 1-2 tons is soluble and 54 tons insoluble.

This example is taken from an actual analysis of a soil in the vicinity of Boston. The principles laid down will suffice for the estimation of each and every article found in given soils by chemical researches, and the quantity of manure or of any fertilizer may be easily learned.

Some acres of land upon examination, have been found to contain 91 tons of vegetable matter—some 96 tons—22 of soluble and 72 of insoluble. Excluding stones, we may consider that there are 800 tons of soil to an acre 6 inches deep. In an acre of land, by a calculation of this kind, containing 6.8 of phosphate of lime, bone manure would have no effect.

The peat on the farm of E. Phinney, Esq., used both for fuel and manure, contains 96 per cent. of vegetable matter. The ashes of this peat contains silex, alumine, phosphate of lime, oxide of manganese and oxide of iron.

The carbonate of lime, of potash and of soda, acts upon it. The carbonate of ammonia is taken up by it. Lime neutralizes its acid. Peat bogs are composed of sphaganeous mosses; and on Block Island they are said to renew themselves, after being dug over, in forty years, if the surface paring is returned to the pit when they are dug.

Besides decayed mosses, decayed trees and leaves collect in these swamps and compose a part of the deposit. Peat is of immense value, and not well appreciated by farmers. Experiments of its application in a natural state have proved failures. The farmers on Block Island would not use it. A farmer in Waterford, Me. applied it in a crude state, and his corn was dwarfish and appeared as though struck with the yellow fever. When its acid properties are neutralized, it becomes as valuable as horse dung. Peat bogs must be drained. Covered drains properly constructed, are as effectual as open drains. Peat bogs are remarkable for retaining moisture. Wetness is absorbed by the peat by capillary attraction.

Dr Jackson stated that he had fully described Mr Phinney's method of management, in his third report on the geology of Maine. His meadows are drained. They are then ploughed or the sward inverted; and then dressed with a compost of animal manure, mud and lime prepared in his hog pens, where his hogs earn much of their living by their labor.

On land thus prepared, he has obtained 75 bushels of corn to the acre, and from 4 1-2 to 5 tons of hay per acre. The last season he got a crop of corn of from 80 to 100 bushels per acre. After such land is well drained, he can work upon it with his cattle. He refuses to sell this peat upon this land even at 500 dollars per acre. Being well supplied with peat mud, each hog will make ten loads of manure in the course of the year. This is then thrown out and freely limed. After three weeks' preparation by lime this compost may be applied to the land, at the rate of twenty loads to an acre. About one third of stable manure is deemed the proper proportion to apply to the compost. In the opinion of Mr Phinney and Mr Haggerston, three loads of muck and one load of stable dung are equal to four loads of stable manure.

It is a singular fact that in England peat was formerly considered as a useless substance. One great use of peat consists in its power of absorbing liquid manures. In barn yards it absorbs the urine. The liquid manure of an animal is considered by many judicious farmers, where it can be well saved and applied, as of equal value as the solid. This subject deserves much attention.

Dr Jackson here closed his address, with some extracts from Young's letters of Agricola, in relation to this subject, the most important parts of which have been given in the Appendix to the Second Report on the Agriculture of Massachusetts, to which we must refer the reader for the present.

The Dr closed with an apology for having detained the meeting so long, and the expression of his thanks for their indulgence. The meeting, he may be assured, were highly gratified and instructed by his remarks, and felt that the obligation was wholly on their side.

We give below an imperfect sketch of the remarks of Judge Hayes, of South Berwick, Me., at the Third Agricultural meeting, and present a similar apology, but can offer no other, for the manner in which they appear, than we gave in reporting the speeches of Dr C. T. Jackson.

—

REMARKS OF WILLIAM A. HAYES, Esq.

AT THE THIRD AGRICULTURAL MEETING.

Judge Hayes began his remarks by expressing the pleasure he felt in meeting the farmers of Massachusetts; and though he did not anticipate on his coming to town, being called upon in this way, he was happy to encourage an object so valuable as that contemplated by these meetings, agricultural improvement, by giving an account of his own operations and the success which had attended them. Farmers constituted a common fraternity, and as their sole object was the improvement of this important art, whose interests involved the interests and comforts of every class in society, he should make no apology for speaking of plain matters in a plain way. This was the first time he had been called upon to address a meeting of farmers upon the subject of agriculture, and he must therefore claim their indulgence. He had derived so much pleasure from reading heretofore the reports of these agricultural meetings, made by the Commissioner, that he felt it to be his duty when called ed upon, to contribute his part.

He should first relate his experience in the raising of wheat. He had attempted the cultivation for many years and with very imperfect success. It had been generally destroyed; but whenever he had succeeded, it was always upon high land. In 1838 he purchased of the Shakers, in Canterbury, N. H., one bushel of Black Sea wheat. He sowed it upon an half acre of loamy land, upon which the previous year he had raised a crop of mangel wurtzel; some time previous the land had been manured with muscle bed. The crop appeared very promising but was destroyed by the grain insect, and he obtained a return of only eight bushels. His belief was that the crop was sowed too early. The last year he sowed his wheat much later in the season, and from two bushels sowing on an acre of land, he gathered 41 bushels. His success in this case he considered attributable to his late sowing, owing to which circumstance the wheat did not come into flower until the season for the depredations of the insect had passed. He applied to his wheat land sixty bushels of leeched ashes, a matter which experience has satisfied him is of very great advantage. Like success has attended a similar management in the culture of wheat in other places. He thinks much of the particular kind of wheat sown by him, as he has never known it to be injured by rust or mildew. The kind here spoken of is a red wheat. In the town of Shapleigh, on good ground, the crop on a part of a field sown with common wheat was worthless; while the Black Sea wheat in the same field, gave 52 bushels from one bushel of seed.

On the subject of the evening's discussion, Soils and Manures, he should give his views, founded upon long practice, as he had cultivated a farm under his own personal superintendence, for twenty-four years last past. Lands in good condition can easily be made better; while lands which are poor and exhausted, are with much difficulty raised up. Various substances may be applied, but the main dependence must be placed upon vegetable matter in and upon the soil. His first object, with a view to enrich his farm, is to collect vegetable matter for litter; leaves and straw and waste substances of every description. He collects leaves even late in the spring, as litter for his styes. These seem to be small gatherings, but in the course of the season, where this habit of saving exists, the accumulations become very considerable. He is accustomed yearly to mow his pastures and gather all the brakes and ferns and coarse grasses on which cattle will not feed. In this way his pastures are greatly improved. There is a better quality of grass comes in, and the quantity is much increased. He is accustomed, likewise, to mow his stubble grounds. He cuts the weeds and the old stubble close for litter for his stock, and he does not find that his grass is injured by this mowing. He thus collects a large quantity of vegetable waste, and uses in his barn a large basket, which will hold seven or eight bushels, to distribute it as litter to his stock. The great advantages of this management appear in the increase of his manure and the comfort and consequent thrift of his cattle.

He is in the habit of collecting large quantities of swamp mud, which he deposits in his barnyard, to be trodden upon by his cattle, and he places large quantities in his hog pens. He suffers this to remain through the summer, deeming it not advisable to turn it over. After keeping this through a winter and summer, he carries it out upon his land. He likewise casts soil into his yard; carries in a large amount of bog mud; the wash of the house, likewise, is conveyed to the same place; and he has always swamp mud on hand to place in the yard that the offensive liquids may be absorbed.—He uses lime, likewise, in his compost heap. For many years he has practiced using from ten to thirty casks per year. He deems it most favorable to health, and as far as the uninterrupted health of a very numerous family may be considered a test in the case, the prudence and benefits of the practice are perfectly established.

A great object with him, and upon which he lays most emphatic stress, is the using of all the vegetable matter which he can collect or apply, for enriching his farm. He never carries his manure out in the fall; and he regrets his want of a manure cellar, as he thinks much would be gained by keeping the manure under cover. He does not deem it necessary that it should undergo a fermentation or decomposition before it is carried into the field. He applies twenty loads to the acre. He begins at

one side of his field, and laying eight successive heaps in a row, at the distance of one rod apart, and the rows likewise one rod apart, it will require just twenty times eight heaps to dress an acre. The distance at which the heaps should be placed apart, is ascertained with sufficient accuracy by taking the distance from the hind-end of the cart to the forward feet of the cattle upon the tongue as the measurement of a rod in length. He ploughs his ground about six inches deep, carefully and completely inverting the sod. He seldom ploughs his manure under, excepting where he would raise tap-rooted vegetables; but having laid his land flat, he spreads his manure and then harrows it and cross harrows it until a fine tilth is produced. His corn is planted three and a half feet apart and is carefully hoed three times without making any hill whatever; and he is careful to suffer no weeds to remain among it. It is suffered to stand in the field until perfectly ripe; and the stalks are not cut until the corn is so far advanced that there can be no advantage from them to the ripening of the ear. His butt stalks also are saved with great care; and when stowed away, his corn fodder being intermixed in alternate layers with wheat straw, the straw itself is rendered more nutritious and savory for his cattle. If he plants potatoes, he is careful to plant whole potatoes and of a good size. The sprouts from such are stronger, and the crop is a fortnight earlier. The potatoes are hoed twice and the ground kept clear from weeds.

The second year the ground which has been in corn is not ploughed nor the sod disturbed or reverted; but it is harrowed in both directions by the cultivator managed by one man with a horse. The wheat is then sowed at the rate of two bushels to an acre, or barley or oats as he may choose, with grass seeds.

He has been in the habit of raising esculent roots for his stock, of the value of which as feed, he has a high estimation; mangel wurtzel, carrots, turnips, and ruta baga. He likes the ruta baga very much as feed for his horses. He planted last year two acres of carrots and ruta baga upon green sward, managed as he has said, and obtained one thousand bushels. Potatoes are sometimes made the second crop in the course. In that case his land has two manurings; and so with other esculent vegetable crops.

After haying, and even late in the autumn, he devotes much time and labor to the improvement of his lands. He carries sand on to clay lands, and clay on to sand lands, and finds much benefit from this intermixture of soil. He deems the principal advantage resulting from this process, to be upon land which he cannot plant, the covering up of all the vegetable matter on the soil, by which means it becomes rotted and improves the staple of the soil. This he deems a matter deserving particular attention; this covering up of vegetable matter and converting it into manure. He pursues this work even until late in the autumn, when the ground is frozen.

He obtains much swamp mud. He has extentensive meadows, which have two and a half feet depth of mud resting upon blue clay. He has attempted the redemption of this land by digging a centre ditch three feet in width and two feet in depth, and cross ditches at right angles with the main ditch, and emptying into it. These cross ditches are two and a half feet wide at top, 18 inches at the bottom and one foot in depth. They occur as often as once in two rods. After the ditching is completed, gravel or sand is carried on to the meadow at the rate of one hundred loads to the acre and manured. It is then sowed liberally with herds grass and clover. The ditches require to be cleared out once in three years, and the matter collected in them spread upon the land. In this way they may be kept in good condition for an indefinite period of time. His own improvements in this way are of twelve years' duration and without deterioration.

In 1838, he undertook the redemption of four acres of this kind of land. He covered it with gravel, which was spread immediately. The next spring when the ground was thawed to the depth of two or three inches, he harrowed it most thoroughly; he then sowed herds grass and followed it with a bush harrow. The crop of grass which he has since obtained from this land was at least two tons to the acre; and the moss in the land was completely decomposed.

He is accustomed to use alternately his pastures as mowing fields and his mowing fields as pastures. He finds a very great advantage from this course of management. He ploughs his pastures, even though he has no manure to apply to them; and though he cannot fence them against his cattle. He inverts the sod, laying it completely over; and then sows his grass seed. In this way the feed of his pastures is greatly improved both in quality and quantity. He ploughs his pastures, getting a crop of Indian corn and then laying down his land with Indian wheat and grass seeds. The Indian wheat, i. e. the Tartarian buck wheat, is deemed by him a good crop, and the flour much esteemed. When he has no manure to apply to the land, he ploughs it in a shallow manner; but, at any rate, it should be occasionally ploughed and sowed with grass seed.

Judge Hayes has done much in the improvement of his live stock, having obtained an improved Short-Horn bull from Greenland, N. H., where this valuable stock has been some time reared, and from which the beautiful ox Columbus was descended, an ox whose superior is seldom seen.

He closed his remarks much too soon; but he has kindly promised that we shall soon hear from him on these subjects—an engagement which he cannot too soon fulfil. We shall hold him strictly to his word in this case; and being a lawyer, and knowing the consequences of neglecting "to take up one's paper," we mean to sue him if he does not pay the note at maturity.

The account he has given of his farming operations so far, will be read with much interest and instruction. His improvement of his pasture lands deserves particular attention. We have often urged it upon farmers; but he is the only man we have yet known to practice it. H. C.

HINTS ON THE CARE OF HORSES.

There are a great many farmers who take but poor care of their horses in the winter season. In the short days they have water before dark, and then have to go without until nine or ten o'clock the next morning, or if they have water early in the morning, they will not usually drink, as their time of thirst is past. Horses seldom refuse water after they have eaten their evening meal, though if they do not have it then, they will usually drink but little the next morning until after eating. So if a horse will not drink early in the morning, it is no indication that he has not been thirsty the previous evening.

We have been particular in our observations on this point. We have turned a horse out to drink at nine or ten o'clock in the evening, and seldom knew him to fail of drinking heartily. Then for experiment, we omitted to give him water in the evening and attended to it in the morning before he was fed, and he would seldom drink. If it be best for animals to have free access to water at all times, as is generally allowed, then they ought surely to have a supply immediately after eating, when they are usually thirsty; though the superficial observer who finds that they will not drink early in the morning, may think that all has been well.

There is not a man probably, who has not at times been very much in want of drink, and yet, without being able to obtain it, his thirst has gradually abated. In this case the juices from other parts of the body are, in a measure, put in requisition, to supply moisture when it is wanted, so, by an equalness, the thirst is abated or done away, but there is a deficiency of moisture in the system—a drought less severe but more extensive, which if experienced daily, will prove unfavorable to health and strength; and in animals it will injure the growth of the young and operate against the fine, healthy condition of every creature. They must have water when they need it, or they will not drink; like men, they do not eat and drink according to fashion and custom.

Some farmers will use their horses till they are warm and sweaty, and then put them up, perhaps, in a cold barn, without covering them with any thing to keep them warm. This is often greatly increased by allowing the horses to drink freely of water while warm, in order to save the trouble of watering them after they have stood till cool: a great many horses suffer in this way, and some are ruined. For a man or beast to be inactive and exposed to cold after exercise and perspiration, is very destructive of health, and will destroy the strongest constitutions. Every man knows the importance of guarding himself against exposure to cold after perspiration, and how a drink of cold water in this state, will send a chill through his whole frame. Though a man is not like a horse, he resembles him in his ability to endure a great deal of labor, with proper management, and in his liability to disease if his tender frame be not guarded with care.

It was observed in the Farmer some months ago, that it was better for a horse to have a place in the winter where he could stand upon the manure, and walk round at ease, than to be confined to a stall and stand upon a hard floor. But in this case, as the horse will generally stand in one place to eat, the manure will accumulate under his hind feet so that he will stand uneasy, unless it be levelled frequently, so that it will be as high or higher under his fore feet.

Currying horses is very much neglected by some farmers. This operation is very important, as it contributes both to the pleasure and health of the animal. In some cases this business is hardly attended to, being performed only a few times in the course of the winter.

Many a farmer's horse that is now stupid and lazy, and of a miserable appearance, would, under the care of a good hostler, without extra keeping, become so changed in his appearance and spirits in a few months, that his owner would hardly know him. —*Maine Farmer.*

NEW ENGLAND FARMER,
AND HORTICULTURAL REGISTER.

Boston, Wednesday, February 12, 1840.

REPORT ON BEET SUGAR PREMIUMS.

The Trustees of the "Massachusetts Society for the Promotion of Agriculture," impressed with the consideration of the important advantages that might be derived as well for the benefit of the agricultural as of the manufacturing interests of the country; and being also aware that the attention of many eminent men in several foreign countries has been zealously devoted to this subject, whereby great improvement in the production of the beet and the manufacture of sugar therefrom was in progression; were thereby induced in their proposals of premiums the last year to offer as follows, viz:

"To the person, persons or corporation who shall raise the greatest quantity of sugar beets by the acre, not less than two acres, which shall be manufactured into sugar in the year 1839, giving a particular account of the soil and the manner of sowing, cultivating and gathering the beets, a premium of *One Hundred Dollars*."

This premium was not claimed, although the principal objects aimed at by the Trustees, viz: the soil best suited, the manner of cultivation and ingathering of the beets, are fully made to appear in the application made for the next proposed premium, having relation to the same subject, which was as follows, viz:

"To the person, persons or corporation who shall manufacture from the sugar beet, (denominated Silesian white beet,) sugar in the greatest quantity and of the best quality, in the year 1839, giving a full and particular account of the process of manufacturing it, a premium of *One Hundred Dollars*."

For this premium there was only one claim preferred, which was from the Northampton Beet Sugar Company, by their agent, David Lee Child, Esq., who presented two several samples of common brown sugar of the usual flavor of such low priced commodity. An excellent sample also of loaf sugar, a very bright color, well grained and crystalized, and no wise inferior in appearance to the best loaf sugar manufactured from the cane. The sugar of each quality was carefully examined by the committee. It was also inspected as made use of in different articles of confectionary, by one well conversant in the art (Mr Duroy,) who commended each sample, considering it as fully equal to sugar of the like quality from the cane.

There were also two samples of molasses one of which appeared to be of good flavor and quality, and it was thought well suited for those purposes to which this well known article is applied for domestic use or for the Bakery.

The article of second quality may be used for the distillery, or for various gross purposes as well as in aid of the vinegar cask. Its properties are also thought well of as nutritive for animals.

The whole process of sowing, cultivating, ingathering and preserving the Silesian white beet, considered as the most replete with saccharine matter, and of course most suitable for manufacture, with remarks on the soil best suited for production, and a full and particular account of the whole course of the manufacturing the beet sugar through its several processes, are very minutely set forth in a pamphlet of 150 pages. This work of careful research, the committee are led to expect, will hereafter be so far abridged as to diffuse a more general knowledge than might otherwise be had.

For the several wished-for objects thus brought into notice, the community are indebted to the praiseworthy enterprise of the Northampton Beet Sugar Company, and the assiduous application and zeal of their agent, Mr Child.

The measures thus taken in this establishment may, it is hoped, lead to a course of experiment and improvement which may, if persevered in, lead to their benefit as well as that of the public.

The Northampton Beet Sugar Company, having produced through their agent, Mr Child, the requisite certificates as to the quantity and quality of beet sugar manufactured by them, and the same having been carefully examined and found to be severally of good quality, as herein represented, and having, also, submitted a full and particular account of the whole process of the manufacture, the committee were induced to report that they are entitled to the premium of one hundred dollars.

It may be considered, perhaps, incumbent on the committee, in closing this report, to state some facts which the treatise furnished, in connexion with this subject, will, if referred to, more fully show.

The cost of the brown sugar as manufactured, appears to be from 5 to 6 cents per pound. In France, where nearly one hundred millions of pounds are said to be annually manufactured, being about three pounds to a person, labor, generally, is much lower, and a great part of it is performed by women and children; it is done, too, at a rate less than half what is paid here. This, as far as labor is included in the calculation, would add essentially to the cost of the sugar. There are, however, circumstances which are reasoned upon in this communication, which go far to counteract these disadvantages, viz: the cheapness of fuel, rent, buildings, &c.

The value of the pulp, too, or residuum of the beet may be of great advantage, if well distributed, in the fatting of cattle, swine, &c.

There is, in conclusion, one important object to be hoped for from the great efforts which are making in Europe as well as in this country, that the research and experiments now in exercise, may conduce to a more simple process, by which the manufacture of beet sugar may be availed of by domestic industry. This is by many confidently anticipated.

It is, however, much to be regretted, that this desired object has, in this respect, thus far, wholly failed.

All of which is submitted in behalf of the Committee.

JOHN WELLES, *Chairman*.

Boston, 1839.

THE FOURTH AGRICULTURAL MEETING

Was holden on Thursday evening, 6th inst., Mr King in the Chair.

The meeting proceeded to elect four vice presidents and an additional secretary. The following gentlemen were chosen vice presidents:

Mr Otis Brigham, of Westboro';
" B. P. Williams, of Roxbury;
" C. P. Phelps, of Hadley;
" Jesse Pierce, of Stoughton.

Mr Henry W. Cushman, of Bernardston, was chosen additional secretary.

The Commissioner then proceeded to exhibit to the meeting a butter presser, for the purpose of expressing the buttermilk without applying the hand to the butter. This was invented at Nantucket, and had been sometime used there by the inventor, who greatly approved it. It is a simple machine, somewhat resembling a baker's brake.

A turnip quarterer or slicer, simple and cheap in its construction and effectual in its operation. This he had obtained in the interior of New York, and commended it to the use of the farmers.

Next a sample of superior winter wheat, sent him from Halifax, under the name of Chevalier wheat, or Brown's prolific. It is a soft-skinned winter wheat, and eminently beautiful.

Next, samples of raw silk from Dr Deane, at Greenfield, reeled upon a simple machine of his own construction; on his part a first attempt at raising silk: in this case a perfectly successful attempt.

Next, specimens of raw silk, of a beautiful quality, from Northampton, Mass., and Burlington, N. J., made from the leaves of trees planted the last April. Next, beautiful specimens of sewing silk, manufactured at Northampton and at Harvard, Mass.: and next, a superior specimen of black silk velvet, and seven different specimens of elegantly wrought wide ribbons; the silk grown and the articles manufactured by Miss Gertrude Rapp, of Economy, Penn.; a lady who receives this year for her products more than four hundred dollars, in bounties from the State.

Lastly, a box of butter, recently made, and without any artificial coloring whatever, sent to him from the farm of Mr C. Denny, of Westboro', and manufactured by Mrs Blake. It is of as fine color and flavor, as if manufactured in June, and done up with the greatest neatness and care. The Commissioner has often urged upon farmers in the vicinity of Boston, to keep winter dairies, as the trouble would not be greater than in summer, and new butter of the best quality would at that season command the most liberal price. He has been constantly met with the objection that butter of a good consistence and color could not be made at this season of the year. He was happy to show this butter, as demonstrating the error of this prejudice; and the admiration which it called out, will not, it is hoped, be lost upon the farmers. Almost as many penknives were drawn out to taste it, as Burke says, swords would have flown from their scabbards in behalf of the beautiful French queen. The swords would have been for defence: the penknives were for attack; and the Commissioner thought himself fortunate that he was able to maintain the citadel unharmed.

The meeting was then addressed, at the invitation of the committee of arrangements, by the Hon. Isaac Hill, ex-governor of New Hampshire. The subject of his address was the Improvement of the Agriculture of New England. He went largely into a view of the improvements and present condition of husbandry in Great Britain, and showed in what respect their modes of husbandry were applicable to our country. The address was received with much gratification by a crowded assembly. It was interesting, instructive, and useful. At this time, as will be seen from the state of our columns, we have no room even for an abstract of it. This will be given hereafter.

The Fifth Agricultural Meeting will be held at the Representatives' Hall on Thursday evening next, at 7 o'clock. The subject of discussion—Indian Corn.—H. C.

A CARD.

The Commissioner of Agricultural Survey respectfully acknowledges the receipt from Messrs Ellis and Bosson of this city, of a sample of Spring Wheat called Ely's Gigantic Wheat; deemed highly prolific. It is singularly beautiful.

From George Randall, Esq. of New Bedford, a sample of Spring Wheat raised on his highly improved farm in Rochester, Plymouth County—a very fine grain; a sample of Winter Wheat grown on the same farm, and quite fair; a sample of Chevalier Barley, recently imported, and a heavy and beautiful article; and a sample of Wheat from Orleans County, New York, very good, with which his own will not suffer by comparison.

From Messrs J. Breck and Co. samples of Winter Wheat denominated Surry Golden Drop and Withington Wheat, both winter grains; and samples of Hopetoun, Essex Winter, Kent Tartary, and Dutch Poland Oats; and of tares and beans, from a lot selected by Mr Webster in his recent visit to England; and without doubt among the best which could be found. The wheats are remarkably beautiful, and the oats very fine samples.

These several articles will be exhibited to the farmers at the next agricultural meeting.

HENRY COLMAN,
Commissioner of Agricultural Survey.

To Correspondents and Readers.—The communication from Mr Warren on the Rohan Potato shall appear in our next.

☞ We trust it needs no apology that we have given our readers in our paper of to-day, so much of a good thing. We did not like to divide the speeches, and we know they will be read with instruction and pleasure.

BRIGHTON MARKET.—Monday, Feb. 10, 1840.

Reported for the New England Farmer.

At Market 347 Beef Cattle, 660 Sheep.

Prices.—*Beef Cattle.*—Our quotations last week for first quality should have been $7 00 instead of $6 75 as reported. We quote this week First quality, $7 00. Second quality, $6 25 a $6 75. Third quality, $5 25 a $5 75.

Cows and Calves.—Very few at market and no sales noticed.

Sheep.—Owing to the large number at market last week prices did not much advance. We quote lots at $2 50, $3 00, $3 75 and $5 00.

Swine.—None at market.

THERMOMETRICAL.

Reported for the New England Farmer.

Range of the Thermometer at the Garden of the proprietors of the New England Farmer, Brighton, Mass. in a shaded Northerly exposure, week ending February 9.

Feb., 1840.		7 A.M.	12, M.	5, P.M.	Wind.
Monday,	3	8	23	20	N. W.
Tuesday,	4	1*	4	2	N. W.
Wednesday,	5	8*	20	14	N. W.
Thursday,	6	20	40	34	S. W.
Friday,	7	44	49	38	S.
Saturday,	8	30	34	34	E.
Sunday,	9	32	48	39	E.

* Below zero.

WEBSTER'S SEEDS.

The subscribers beg leave to state that they have received Mr Webster's Seeds; those who wish to experiment upon them and obtain a portion, had better call or send soon. They are as follows—

Hopetown Winter Oats.
Essex do. do.
Dutch Poland Spring do.
Kent Tartary do.
Essex Winter Beans.
Mumford's Garden, or Horse Beans.
Yorkshire Prolific Beans.
Suffolk Harrad Tick do.
Whittington Winter Wheat.
Surrey Golden Drop do. do.
Winter Tares, or Vetches.
Spring Tares, or Vetches.
Italian Rye Grass.
Pacey Rye Grass.
White Globe Turnip.
Pomeranian do.
Swedish do.
Red Tankard do.
Yellow Scotch do.
White Tankard do.
Purple Top Hybrid.
Red Globe Mangel Wurtzel.
White do. do.

We have also received some of the Early Hope Cabbage Seed, which was tried last year at New York and proved to be superior to any Early Cabbage hitherto known in the country.

We have now in New York, which will come to hand in a few days, some of the Chevalier Barley, which we shall be happy to offer to our customers.

It has been understood by some that the seeds were left with us for gratuitous distribution. We wish to correct this mistake as it is not the case. We were directed to dispose of them at a small advance, sufficient to pay for our trouble, storage, &c. JOSEPH BRECK & CO.

Boston, Feb. 12, 1840.

THE STATE REGISTER,

Containing the New Tariff for 1840, the Insolvent Law, New List of Post Offices, State, City and United States Authorities, Judges, Counsellors, Attorneys, Sheriffs and their Deputies, Masters in Chancery, Justices, Notaries, Coroners, Clergy, Physicians, Militia, Army and Navy, Banks and Insurance Companies, besides other useful matter. For sale by JAMES LORING, No. 132 Washington Street.

February 12. 3t

SITUATION WANTED AS GARDENER,

By a married man with no incumbrance but his wife—one whose practical experience is known to the amateurs of this vicinity. Any commands addressed to Joseph Breck & Co for M. I. will be promptly attended to.

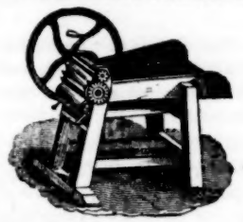
Feb. 5.

GARDEN MATS.

For sale at the New England Farmer, 100 dozen Garden Mats, of extra quality, for covering hot beds, &c.

Feb. 12. JOSEPH BRECK & CO.

GREEN'S PATENT STRAW CUTTER.



JOSEPH BRECK & CO. at the New England Agricultural Warehouse and Seed Store, Nos. 51 and 52 North Market Street, have for sale, Green's Patent Straw, Hay and Stalk Cutter, operating on a mechanical principle not before applied to any implement for this purpose. The most prominent effects of this application, and some of the consequent peculiarities of the machine are:

1. So great a reduction of the quantum of power requisite to use it, that the strength of a half grown boy is sufficient to work it very efficiently.

2. With even this moderate power, it easily cuts two bushels a minute, which is full twice as fast as has been claimed by any other machine even when worked by horse or steam power.

3. The knives, owing to the peculiar manner in which they cut, require sharpening less often than those of any other straw cutter.

4. The machine is simple in its construction, made and put together very strongly. It is therefore not so liable as the complicated machines in general use to get out of order.

AGRICULTURAL BOOKS.

JOSEPH BRECK & CO. offer for sale a great variety of Agricultural books, among which are the following:

Loudon's Encyclopedia of Gardening.
" " of Plants.
" " of Agriculture.
" Suburban Gardener.
Forbe's Hortus Woburnensis.
Practical Agriculture, by David Low.
Chaptal's Agricultural Chemistry.
Hogg on the Cultivation of the Carnation and other Florists Flowers.
The Florist Cultivator.
Bridgeman's Gardeners' Assistant.
Fessenden's American Gardener.
" Complete Farmer.
Kenrick's Orchardist.
Manning's First Book of Fruits.
Sayers' Fruit Garden Companion.
" Flower Garden Companion.
Treatise on Sugar Beet, by David Lee Child.
American Swine Breeder.
Mowbray on Poultry.
Monography of the Genus Camellia.
Dennis' Silk Manual.
Cobb's do.
Kenrick's Silk Growers Guide.
Whitmarsh on the Mulberry Tree and Silk Worm.
American Farrier.
Parley's Cyclopedia of Botany—The Young Florist.
Weeks' Treatise on Bees.

February 5.

ELEMENTS OF PRACTICAL AGRICULTURE.

Just received, a supply of the Elements of Practical Agriculture, comprehending the cultivation of plants, the husbandry of domestic animals, and the economy of the farm. By David Low, Esq. F. R. S. E., Professor of Agriculture in the University of Edinburg. Second edition, with numerous engravings; 718 pp. London published. For sale by JOSEPH BRECK & CO., No. 51 and 52 North Market Street.

February 5.

FLOWER SEEDS—CHOICE VARIETIES.

JOSEPH BRECK & CO. have received a choice assortment of Flower Seeds from England and France, which, in addition to what have been raised under their own inspection, embrace the finest collection to be found in the country, including all the new Annuals, Biennials, and Perennials worthy of cultivation; neatly done up in papers at 6 1-4, 12 1-2, and 25 cents each. For sale at 51 and 52 North Market Street.

February 5.

FOR SALE.

An excellent Farm, pleasantly situated about 20 miles from the city, containing about 100 acres. For full description, particulars, &c. inquire at this office.

Also, a situation wanted by a man with a small family to carry on a farm.

January 30. 4w

WHOLESALE PRICES CURRENT.

CORRECTED WITH GREAT CARE, WEEKLY.

			FROM	TO
Alum, American,		pound	5	5½
Ashes, Pearl, per 100 lbs.			5 75	5 87
Pot, " " "			5 12	5 25
Beans, white, Foreign,		bushel	1 62	2 00
" " Domestic,		"	2 00	2 00
Beef, mess,		barrel	14 00	14 50
No. 1.		"	12 00	12 50
prime,		"	10 00	10 50
Beeswax, white,		pound		
yellow,		"	28	35
Bristles, American,		"	35	70
Butter, shipping,		"	11	13
dairy,		"	17	20
Candles, mould,		"	14	15
dipped,		"		
sperm,		"	40	41
Cheese, new milk,		pound	10	
Cider,		dozen	1 50	1 75
refined,		barrel	2 50	4 50
Bone Manure,		bushel		35
in casks,		"		40
Feathers, northern, geese,		pound		
southern, geese,		"	37	46
Flax, (American)		"	9	12
Fish, Cod, Grand Bank,		quintal	2 67	2 75
Bay, Chaleur,		"	2 25	2 37
Haddock,		"	1 25	1 50
Mackerel, No. 1,		barrel	12 50	13 00
No. 2,		"		11 50
No. 3,		"	6 00	6 25
Alewives, dry salted, No. 1.		"	5 00	5 25
Salmon, No. 1,		"	18 00	19 00
Flour, Genesee, cash,		"	7 00	7 25
Baltimore, Howard street,		"		7 00
Richmond canal,		"		6 87
Alexandria wharf,		"		6 87
Rye,		"	4 62	4 75
Meal, Indian, in bbls.		"	4 00	4 25
Grain: Corn, northern yellow,		bushel		85
southern flat, yellow,		"	78	80
white,		"		75
Rye, northern,		"	85	90
Barley,		"	75	80
Oats, northern, (prime)		"	46	48
southern,		"	40	45
Grindstones, pr ton of 2000 lbs. rough,			18 00	19 00
do. do. do. finished,			28 00	30 00
Hams, northern,		pound	9	10
southern and western,		"	7	8
Hay, best English, per ton,			16 00	18 00
Eastern screwed,			12 50	13 00
Hops, 1st quality,		pound	18	20
2d quality,		"	17	18
Lard, Boston,		"	10	11
southern,		"	9	10
Leather, Philadelphia city tannage,		"	29	30
do. country do.		"	25	27
Baltimore city tannage,		"	26	28
do. dry hides,		"	22	24
New York red, light,		"	21	23
Boston, do. slaughter,		"	21	22
Boston dry hides,		"	20	22
Lime, best sort,		cask	85	90
Molasses, New Orleans,		gallon	27	30
Sugar House,		"	50	55
Oil, Sperm, Spring,		"	1 10	
Winter,		"		1 15
Whale, refined,		"	50	55
Linseed, American,		"	70	75
Neat's Foot,		"	95	
Plaster Paris, per ton of 2200 lbs.			2 87	3 00
Pork, extra clear,		barrel	17 00	18 00
clear,		"	16 00	17 00
Mess,		"	14 00	15 00
Prime,		"	12 00	13 00
Whole Hogs,		pound	5½	6½
Seeds: Herd's Grass,		bushel	2 50	3 00
Red Top, southern,		"	80	1 00
northern,		"		1 50
Canary,		"	2 25	2 50
Hemp,		"	2 25	2 50
Flax,		"	1 37	1 62
Red Clover, northern,		pound		
Southern Clover, none,		"		
Soap, American, Brown,		"	5	7
" Castile,		"	12	13
Tallow, tried,		"	11	12
Teazles, 1st sort,		pr M.	2 50	3 00
Wool, prime, or Saxony Fleeces,		pound		
American, full blood, washed,		"		
do. 3-4ths do.		"		
do. 1-2 do.		"		
do. 1-4 and common,		"		
Northern pulled. Pulled superfine,		"		
No. 1,		"		
No. 2,		"		
No. 3,		"		

MISCELLANEOUS.

THE MOLE.

The strong, short legs of the mole, the palmated feet, armed with sharp nails, the pig-like nose, the teeth, the velvet coat, the small external ear, the sagacious smell, the sunk, protected eye, all conduce to the utilities or to the safety of its underground life, It is a special purpose, specially consulted throughout.

The form of the feet fixes the character of the animal. They are so many shovels: they determine its action to that of rooting in the ground; and every thing about its body agrees with this destination. The cylindrical figure of the mole, as well as the compactness of its form, arising from the terseness of its limbs, proportionally lessons its labor; because, according to its bulk, it thereby requires the least possible quantity of earth to be removed from its progress.

It has nearly the same structure of the face and jaws as a swine, and the same office for them. The nose is sharp, slender, tendinous, strong; with a pair of nerves going down to the end of it. The plush covering, which, by the smoothness, closeness, and polish of the short piles that compose it, rejects the adhesion of almost every species of earth, defends the animal from cold and wet, and from the impediment which it would experience by the mould sticking to its body. From soils of all kinds the little pioneer comes forth bright and clean. Inhabiting dirt, it is of all animals the neatest.

But what I have always most admired in the mole, is its eyes. This animal, occasionally visiting the surface, and wanting, for its safety and direction, to be informed when it does so, or when it approaches it, a perception of light was necessary. I do not know that the clearness of the sight depends at all upon the size of the organ. What is gained by the largeness or prominence of the globe of the eye, is width in the field of vision. Such a capacity would be of no use to an animal which was to seek its food in the dark. The mole did not want to look about it, nor would a large advanced eye, have been easily defended from the annoyance, to which the life of the animal must constantly expose it. How, indeed, was the mole, working its way under ground, to guard its eyes at all? In order to meet this difficulty, the eyes are made scarcely larger than the head of a corking-pin; and these minute globules are sunk so deeply in the scull, and lie so sheltered within the velvet of its covering, as that any contraction of what may be called the eye-brows, not only closes up the apertures which lead to the eyes, but presents a cushion, as it were, to any sharp or protruding substance which might push against them. This aperture, even in its ordinary state, is like a pin-hole in a piece of velvet, scarcely pervious to loose particles of earth. Observe, then, in this structure, that which we call relation. There is no natural connexion between a small, sunk eye, and a shovel, palmated foot. Palmated feet might have been joined with goggle eyes; or small eyes might have been joined with feet of any other form. What was it, therefore, that brought them together in the mole? That which brought together the barrel, the chain, and the fusee in a watch, design; and design, in both cases, interferred from the relation which the parts bear to one another in the prosecution of a common purpose.

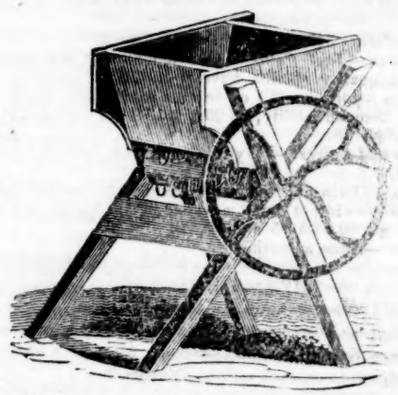
COCOA NUT TREE.

The tree attains a considerable height in those places which are best suited for its growth; and it grows on those sandy soils which are not so well adapted for the culture of other useful vegetables. Like the rest of the palm family, the cocoa-nut tree is without branches; but the trunk consists of a tissue of remarkably tough fibres, that intersect each other like net work, and thus the tree can bear those violent storms and hurricanes which are so frequent on the Indian shore. The middle rib of the leaves is often ten, twelve, or fourteen feet long, and is very firm and strong. The leaflets are very numerous, of considerable strength and very durable. These leaflets are not only used for the manufacture of baskets, but are an important article in Hindoo architecture, being plated together to form the roofs and walls of houses, of which the trunks, when split, compose the beams and rafters. The flowers come out at the roots of the leaves, in long sheaths, of which there is a considerable number upon a vigorous tree. When the flowers have nearly attained maturity the sheaths upon the male flowers drop off, the germs begin to expand into nuts, and after they have attained a considerable size, the sheath also shrinks up. The fruit, when it approaches maturity, is very large, far larger than the nut which is imported into this country. It consists externally of a hard brown rind, which is very thin and tender; within that, there is a great quantity of brown fibres. This fibrous matter, which is known by the name of *coire*, is of great use to the natives. When short, it is used for the same purpose as baked hair in this country, and cushions stuffed with it are very elastic. It is also spun into cordage of a very superior quality, and there have been many instances of vessels riding out storms securely by coire cable, when the best hempen ones, of European manufacture, have failed. The use of the cocoa-nut shell, as a vessel, is well known in this country. It is one of the most firm and durable of vegetable substances, and requires very little preparation to make it fit for use. The pulp of the nut, though rather indigestible when used alone, is a favorite ingredient in many Indian dishes It also yields a great quantity of oil, which is used in India for the lamp, and for many other purposes.—*Picture of India.*

PRINCE OF WALES AND MAJOR NORTH.—North was an aid-de-camp to the Baron Steuben, Inspector General of the Revolutionary Army. After the peace, he made a trip to England, where, being a sensible, witty young man, he was introduced into good company. At a party, where the Prince of Wales was present, (the King then laboring under his first malady) Major North was called on for a toast. Forgetful, for a moment, of that propriety which had distinguished him, he unguardedly proposed, "A speedy coronation to the Prince of Wales." The Prince immediately discharged his glass of wine in the Major's face; who, with great self-possession and ready humor, threw his own in the face of the next guest, exclaiming, "Pass it round—'tis the Prince's sentiment." Thus was a serious beginning turned into a jocular end.

"I was charmed,' said Lord Oxford, "with the answer of a poor man in Bedlam, who was insulted by a boy because he would not tell him why he was confined. The unhappy man at last said:—'Because God Almighty has deprived me of that which you never had!'"

VEGETABLE CUTTER.



Willis's New Improved Vegetable Cutter. This machine is calculated for cutting up vegetables and esculent roots for fodder, and is one of the most useful and economical machines that the farmer can use. The subscribers feel great confidence in recommending this machine to the public; they are aware that it has been long wanted and they now offer a machine that cannot fail to give satisfaction upon a fair trial. It will cut with ease from one to two bushels per minute, in the best possible manner, and is not liable to get out of order, being made in the most substantial manner. No farmer should be without one of them. For sale at the Agricultural Warehouse, 51 and 52 North Market Street.
December 18. JOSEPH BRECK & CO.

BONE MANURE.

The subscriber informs his friends and the public, that after ten years experience, he is fully convinced that ground bones form the most powerful stimulant that can be applied to the earth as a manure.

He keeps constantly on hand a supply of Ground Bone, and solicits the patronage of the agricultural community. Price at the Mill 35 cents per bushel; put up in casks and delivered at any part of the city at 40 cents per bushel, and no charge for casks or carting.

Also, ground Oyster Shells.

Orders left at the Bone Mill, near Tremont road, in Roxbury, at the New England Agricultural Warehouse and Seed Store, No 52 North Market Street, or through the Post Office will meet with prompt attention.
NAHUM WARD.

SCIONS OF FRUIT TREES FOR SALE.

The collection of fruits cultivated at the Pomological Garden consists of more than 1400 varieties of the Apple, Pear, Plum, Cherry and Peach. Scions of all those which have been proved are offered to nurserymen and others. Gentlemen wishing to send collections of American fruits to their friends in Europe can be furnished with most of those of first rate quality. They are warranted true to their names, and are in all cases cut from fruit bearing trees.
Salem, January 28, 1840. ROBERT MANNING.

A MAN WANTED.

To do the work on a small place, a few miles from the city. He must understand the cultivation of vegetables, fruits, &c., and the care of horse, cows, &c. A single man, from 20 to 30 years of age, of steady and industrious habits, may inquire at this office. J. B. I.
January 15.

AMERICAN SWINE BREEDER.

Just published and for sale by JOSEPH BRECK & CO. the American Swine Breeder; a Practical Treatise on the Selection, Rearing, and Fattening of Swine, by Henry W. Ellsworth: price 75 cents.
January 15.

ROHAN POTATOES,

For sale at the New England Agricultural Warehouse and Seed Store, No. 52 North Market Street, at $5 per barrel.
October 16. JOSEPH BRECK & CO.

THE NEW ENGLAND FARMER

Is published every Wednesday Evening, at $3 per annum payable at the end of the year—but those who pay within sixty days from the time of subscribing are entitled to a reduction of 50 cents.

TUTTLE, DENNETT AND CHISHOLM, PRINTERS,
17 SCHOOL STREET....BOSTON